CLAIMS

1. A wireless communication apparatus comprising:

a subcarrier allocation section allocating first data satisfying predetermined conditions to subcarriers selected by scheduling based on reception quality information indicating reception quality of each communicating party and required transmission rate information indicating required transmission rate of each communicating party, while allocating second data constituting data different to the first data to subcarriers determined in advance; and

a transmission section transmitting the first data and the second data allocated to subcarriers by the subcarrier allocation section.

2. The wireless communication apparatus according to claim 1, wherein the subcarrier allocation section allocates the first data constituted by dedicated data transmitted each communicating party to the subcarriers selected using scheduling, and allocates the second data constituted by common data transmitted to a plurality of communicating parties to the subcarriers determined in advance.

3. The wireless communication apparatus according to claim 1, further comprising a data amount determination

section for determining an amount of data of transmission data,

wherein the subcarrier allocation section allocates the first data of a data amount greater than or equal to a first threshold value to the subcarriers selected using scheduling, and allocates the second data of a data amount less than the first threshold value to the subcarriers determined in advance.

4. The wireless communication apparatus according to claim 1, further comprising a movement speed estimation section for estimating movement speed of communicating parties from a received signal,

wherein the subcarrier allocation section allocates the first data transmitted to a communicating party of a movement speed estimated by the movement speed estimation section of less than a second threshold value to the subcarriers selected by scheduling, and allocates the second data transmitted to a communicating party of a movement speed estimated by the movement speed estimation section of greater than or equal to the second threshold value to the subcarriers determined in advance.

5. The wireless communication apparatus according to claim 1, further comprising a delay spread measuring section measuring delay spread of a propagation path from a received signal,

wherein the subcarrier allocation section allocates the first data of a delay spread measured by the delay spread measuring section of greater than or equal to a threshold value to the subcarriers selected by scheduling, and allocates the second data of a delay spread measured by the delay spread measuring section of less than the threshold value to the subcarriers determined in advance.

6. The wireless communication apparatus according to claim 1, further comprising a delay spread measuring section measuring delay spread of a propagation path from a received signal,

wherein the subcarrier allocation section allocates the first data of a delay spread measured by the delay spread measurement section of greater than or equal to a lower order threshold value and less than an upper order threshold value set in a direction where delay spread becomes larger than the lower order threshold value to the subcarriers selected by scheduling, and allocates the second data of a delay spread measured by the delay spread measuring section of less than the lower order threshold value and greater than or equal to the upper order threshold value to the subcarriers determined in advance.

7. The wireless communication apparatus according to claim 1, wherein the subcarrier allocation section

allocates the second data to a plurality of subcarriers at predetermined frequency intervals within the communication band.

8. The wireless communication apparatus according to claim 1, wherein the subcarrier allocation section holds a reference table storing modulation scheme information associating reception quality information and modulation schemes, selects a modulation scheme for each subcarrier using reception quality information for the communicating party, and allocates the first data to subcarriers using scheduling in such a manner that the required transmission rate for each communicating party is satisfied using required transmission rate information.

9. A base station apparatus comprising the wireless communication apparatus of claim 1.

10. A subcarrier allocation method comprising the steps of:

allocating first data satisfying predetermined conditions to subcarriers selected by scheduling based on reception quality information indicating reception quality of each communicating party and required transmission rate information indicating required transmission rate of each communicating party; and

allocating second data constituting data different

to the first data to subcarriers determined in advance.

11. The subcarrier allocation method according to claim 10, wherein the first data constituted by dedicated data transmitted each communicating party is allocated to the subcarriers selected using scheduling, and the second data constituted by common data transmitted to a plurality of communicating parties is allocated to the subcarriers determined in advance.

12. The subcarrier allocation method according to claim 10, further comprising a step of determining an amount of data of transmission data,

wherein the first data of a data amount greater than or equal to a first threshold value is allocated to the subcarriers selected using scheduling, and the second data of a data amount less than the first threshold value is allocated to the subcarriers determined in advance.

13. The subcarrier allocation method according to claim 10, further comprising a step of estimating movement speed of communicating parties from a received signal,

wherein the first data transmitted to a communicating party of an estimated movement speed of less than the second threshold value is allocated to the subcarriers selected using scheduling, and the second data transmitted to a communicating party of an estimated

movement speed of greater than or equal to the second threshold value is allocated to the subcarriers determined in advance.

14. The subcarrier allocation method according to claim 10, wherein the second data is allocated to a plurality of subcarriers at predetermined frequency intervals within the communication band.

15. The subcarrier allocation method according to claim 10, wherein reception information for a communicating party is employed, a modulation scheme is selected for each subcarrier by referring to modulation scheme information associating the reception quality information and the modulation schemes, and the first data is allocated to subcarriers by scheduling in such a manner that requested transmission rate for each communicating party is satisfied using the required transmission rate information.